

# The Light Company

South Texas Project Electric Generating Station P. O. Box 289 Wadsworth, Texas 77483

March 05, 1993  
ST-HL-AE-4360  
File No.: G26  
10CFR50.73

U. S. Nuclear Energy Commission  
Attention: Mr. J. J. ...  
Washington, D.C.

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L. 93-003

Technical                      1.0      Entry due to the  
Inoperable                      1e      PI System

Pursuant to 10CFR50.67, the Licensee Lighting & Power, (HL&P) submits the attached Unit 2 Incident Report 93-003 regarding a Technical Specification 3.1.1.1 failure due to the inoperability of the Digital Rod Position Indicator System. This event did not have an adverse effect on the health and safety of the public.

If you should have any questions on this matter, please contact Mr. J. M. Pinzon at (412) 972-8027 or me at (512) 972-7921.

W. H. Kinsey, Jr.  
Vice President,  
Nuclear Generation

KPD/

Attachment: LER 93-003 (South Texas, Unit 2)

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A Subsidiary of Houston Industries Incorporated

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Houston Lighting & Power Company  
South Texas Project Electric Generating Station

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NRC FORM 366 (5-82)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95														
<h2 style="margin: 0;">LICENSEE EVENT REPORT (LER)</h2> <p style="margin: 0; font-size: small;">(See reverse for required number of digits/characters for each block)</p>										ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.									
FACILITY NAME (1) <b>South Texas, Unit 2</b>										DOCKET NUMBER (2) <b>05000 499</b>					PAGE (3) <b>1 OF 04</b>				
TITLE (4) <b>Technical Specification 3.0.3 Entry Due to the Inoperability of the DRPI System</b>																			
EVENT DATE (5)			LER NUMBER (6)			REPORT NUMBER (7)			OTHER FACILITIES INVOLVED (8)										
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME			DOCKET NUMBER							
02	03	93	93	- 003	- 00	03	05	93	FACILITY NAME			DOCKET NUMBER							
												05000							
												05000							
OPERATING MODE (9)		1		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)															
POWER LEVEL (10)		100		20.402(b)			20.405(c)			50.73(a)(2)(iv)			73.71(b)						
				20.405(a)(1)(i)			50.36(c)(1)			50.73(a)(2)(v)			73.71(c)						
				20.405(a)(1)(ii)			50.36(c)(2)			50.73(a)(2)(vii)			OTHER						
				20.405(a)(1)(iii)			X 50.73(a)(2)(i)			50.73(a)(2)(viii)(A)			(Specify in Abstract below and in Text, NRC Form 366A)						
				20.405(a)(1)(iv)			50.73(a)(2)(ii)			50.73(a)(2)(viii)(B)									
				20.405(a)(1)(v)			50.73(a)(2)(iii)			50.73(a)(2)(x)									
LICENSEE CONTACT FOR THIS LER (12)																			
NAME <b>Jairo Pinzon - Senior Engineer</b>										TELEPHONE NUMBER (include Area Code) <b>(5 1 2) 9 7 2 - 8 0 2 7</b>									
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																			
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS										
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR					
YES (If yes, complete EXPECTED SUBMISSION DATE)				X NO						DATE (15)									
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)																			
<p>On February 3, 1993, at 1000 hours, Unit 2 was in Mode 1 at 100% power. The Unit entered Technical Specification 3.0.3 due to the loss of the Digital Rod Position Indication (DRPI) System. This incident occurred during the performance of the Unit Vent Particulate and Effluent Monitor Digital Channel Operational Test (DCOT) for radiation monitor RT-8010A. The distribution panel, DP003, which supplies power to both the RT-8010A monitor and the DRPI System, experienced a degraded voltage condition during the energization of the RT-8010A monitor. The transfer switch, for the normal/alternate power supply to the distribution panel, responding to the degraded voltage condition on the normal supply attempted to transfer to the alternate supply. The transfer switch malfunctioned and latched mid-way through the transfer resulting in a loss of power to the distribution panel and its subsequent loads. Troubleshooting activities have been performed on the auto transfer switch to determine the cause of the malfunction. As a result of the findings, HL&amp;P will implement a design change to remove the load associated with monitor RT-8010A from distribution panel DP003, create Preventive Maintenance activities to test/inspect these and similar auto transfer switches, and an investigation will be performed to identify if a similar condition exists in Unit 1.</p>																			

REQUIRED NUMBER OF DIGITS/CHARACTERS  
FOR EACH BLOCK

BLOCK NUMBER	NUMBER OF DIGITS/CHARACTERS	TITLE
1	UP TO 46	FACILITY NAME
2	8 TOTAL 3 IN ADDITION TO 05000	DOCKET NUMBER
3	VARIES	PAGE NUMBER
4	UP TO 76	TITLE
5	6 TOTAL 2 PER BLOCK	EVENT DATE
6	7 TOTAL 2 FOR YEAR 3 FOR SEQUENTIAL NUMBER 2 FOR REVISION NUMBER	LER NUMBER
7	6 TOTAL 2 PER BLOCK	REPORT DATE
8	UP TO 18 -- FACILITY NAME  8 TOTAL -- DOCKET NUMBER 3 IN ADDITION TO 05000	OTHER FACILITIES INVOLVED
9	1	OPERATING MODE
10	3	POWER LEVEL
11	1 CHECK BOX THAT APPLIES	REQUIREMENTS OF 10 CFR
12	UP TO 50 FOR NAME 14 FOR TELEPHONE	LICENSEE CONTACT
13	CAUSE VARIES 2 FOR SYSTEM 4 FOR COMPONENT 4 FOR MANUFACTURER NPRDS VARIES	EACH COMPONENT FAILURE
14	1 CHECK BOX THAT APPLIES	SUPPLEMENTAL REPORT EXPECTED
15	6 TOTAL 2 PER BLOCK	EXPECTED SUBMISSION DATE

**LICENSEE EVENT REPORT (LER)**  
**TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)		DOCKET NUMBER (2)		LER NUMBER (6)			PAGE (3)
South Texas, Unit 2		05000 499		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	02 OF 04
				9 3	- 0 0 3 -	0 0	

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

**DESCRIPTION OF EVENT:**

On February 3, 1993, at 1000 hours, Unit 2 was in Mode 1 at 100% power. The Unit entered Technical Specification 3.0.3 due to the loss of the Digital Rod Position Indication (DRPI) System. This incident occurred during the performance of the Unit Vent Particulate and Effluent Monitor Digital Channel Operational Test (DCOT) for radiation monitor RT-8010A. The distribution panel, DP003, which supplies power to both the RT-8010A monitors and the DRPI System, experienced a degraded voltage condition during the energization of the RT-8010A skid's sampling pump motor. The transfer switch, for the normal/alternate power supply to the distribution panel, responding to the degraded voltage condition on the normal supply attempted to transfer to the alternate supply. The transfer switch malfunctioned and latched in mid position resulting in a loss of power to the distribution panel and its subsequent loads.

The alternate supply was restored to the 120 VAC distribution panel at 1016 hours, after maintenance personnel manually transferred the switch to the alternate supply. Subsequently, the switch automatically transferred the 120 VAC distribution panel back to the normal supply per design.

**CAUSE OF EVENT:**

The cause of this event was a malfunction of the transfer switch. Discussions with the transfer switch vendor have determined that the two areas which would most probably cause this type of failure to be mechanical binding of the operating mechanism or poor control contact surfaces. The switch was inspected, but revealed no evidence of any mechanical binding or wear. The control relay contact surface inspection and tests also did not reveal the source of the problem. Repeated operation of the switch could not repeat the incident. Given the sequence of events which led up to and through this event, the information provided by the vendor, the operating characteristics of the switch itself, and the results of the inspections and tests performed, it is postulated that this is a random failure.

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LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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South Texas, Unit 2		05000 499		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	03 OF 04
				9 3	- 0 0 3 -	0 0	

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

ANALYSIS OF EVENT:

This event is reportable since loss of the 120 VAC distribution panel bus resulted in the loss of the Digital Rod Position Indication (DRPI) System and subsequent entry into the requirements of Technical Specification 3.0.3.

DRPI provides an indication of actual control rod position in the control room. Operating with DRPI inoperable is a condition prohibited by the Technical Specifications and reportable pursuant to 10CFR50.73(a)(2)(i)(B).

There were no adverse safety consequences as a result of this event.

CORRECTIVE ACTIONS:

1. HL&P will implement a design change for Unit 2 to remove the load associated with RT-8010A from distribution panel DP003 to the less loaded bus distribution panel DP004. This design change will be implemented by April 5, 1993.
2. HL&P will create Preventive Maintenance activities to test/inspect these and similar auto transfer switches. This action will be completed by June 4, 1993.
3. An investigation will be performed to identify if a similar condition exists in Unit 1 by April 15, 1993. Additional corrective action will be developed as necessary.
4. HL&P will perform review of the transfer switch design in order to ensure that the design is proper for this service. This review will be completed by June 4, 1993.



NRC FORM 366A <small>(5-92)</small>		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95	
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South Texas, Unit 2		05000 499		YEAR	SEQUENTIAL NUMBER
				REVISION NUMBER	PAGE (3)
				9 3	- 0 0 3 -
				0 0	04 OF 04

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

**ADDITIONAL INFORMATION:**

There has been one previous event in which loss of power of the DRPI System occurred. This event is documented in Unit 1 LER 92-012. There have been no previous occurrences of failures of the auto transfer switch associated with distribution panel DP003 in either unit. There are no currently active preventive maintenance activities to address these switches.

Asco is the vendor of the auto transfer switch type 302C1390: 260 amps, 3-phase, and 208 volts.

A Nuclear Plant Reliability Data System (NPRDS) search was conducted on Asco transfer switches. Of the nine reports, causes of eight failures were known.

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